



## International Journal of Agricultural Sustainability

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tags20>

### Revisiting land reform: land rights, access, and soil fertility management on the Adja Plateau in Benin

Rolland H. Yemadje<sup>ab</sup>, Todd A. Crane<sup>b</sup>, Roch L. Mongbo<sup>c</sup>, Aliou Saïdou<sup>c</sup>, Hessou Anastase Azontonde<sup>d</sup>, Dansou K. Kossou<sup>c</sup> & Thomas W. Kuyper<sup>a</sup>

<sup>a</sup> Department of Soil Quality, Wageningen University, P.O. Box 47, Wageningen 6700 AA, The Netherlands

<sup>b</sup> Communication, Technology and Philosophy, Centre for Integrative Development, Knowledge, Technology and Innovation (KTI) Group, Wageningen University, Hollandseweg 1, Wageningen 6706 KN, The Netherlands

<sup>c</sup> Faculté des Sciences Agronomiques, Université d'Abomey-Calavi, Cotonou 01 BP 526, Benin

<sup>d</sup> Laboratoire des Sciences du Sol, Eau et Environnement (LSSEE), Centre de Recherche d'Agonkanmey, Institut National de Recherches Agronomiques du Benin (INRAB), Cotonou 01 BP 988, Bénin

Published online: 25 Apr 2014.

To cite this article: Rolland H. Yemadje, Todd A. Crane, Roch L. Mongbo, Aliou Saïdou, Hessou Anastase Azontonde, Dansou K. Kossou & Thomas W. Kuyper (2014): Revisiting land reform: land rights, access, and soil fertility management on the Adja Plateau in Benin, International Journal of Agricultural Sustainability, DOI: [10.1080/14735903.2014.909645](https://doi.org/10.1080/14735903.2014.909645)

To link to this article: <http://dx.doi.org/10.1080/14735903.2014.909645>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities

whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

## Revisiting land reform: land rights, access, and soil fertility management on the Adja Plateau in Benin

Rolland H. Yemadje<sup>a,b,\*</sup>, Todd A. Crane<sup>b</sup>, Roch L. Mongbo<sup>c</sup>, Aliou Saïdou<sup>c</sup>, Hessou Anastase Azontonde<sup>d</sup>, Dansou K. Kossou<sup>c</sup> and Thomas W. Kuyper<sup>a</sup>

<sup>a</sup>Department of Soil Quality, Wageningen University, P.O. Box 47, Wageningen 6700 AA, The Netherlands; <sup>b</sup>Communication, Technology and Philosophy, Centre for Integrative Development, Knowledge, Technology and Innovation (KTI) Group, Wageningen University, Hollandseweg 1, Wageningen 6706 KN, The Netherlands; <sup>c</sup>Faculté des Sciences Agronomiques, Université d'Abomey-Calavi, Cotonou 01 BP 526, Benin; <sup>d</sup>Laboratoire des Sciences du Sol, Eau et Environnement (LSSEE), Centre de Recherche d'Agonkanmey, Institut National de Recherches Agronomiques du Benin (INRAB), Cotonou 01 BP 988, Bénin

In the oil palm-based cropping system on the Adja Plateau, land titling plays an important role. Landowners argue that oil palm fallow (*dekan*) restores soil fertility, but in the long-term it is also an instrument in the struggle for control over land. A land-titling programme in the study area allowed an analysis of the relationship between titling and soil fertility management that showed two different institutional effects with socio-technical consequences. *Titling* increased land security for landowners and, although this security initially reduced access to land for tenants, a subsequent introduction of *witnessed paper-based contracts* enhanced tenants' access to land and improved their security of tenure. Improved titling and more secure tenure reduced conflicts over land and opened possibilities for agricultural intensification. This change was associated with a shift from long-term oil palm fallow to shorter-term land-management practices where tenants and landowners increasingly invested in land through rotations between maize and cowpea (rather than maize mono-cropping) and the use of mineral fertilizers, without increased use of household waste. The paper suggests that sustainable agricultural intensification requires institutional changes, based on a mixture of customary and formal rules, in both landownership and rental agreements to access land.

**Keywords:** land titling; tenure security; soil fertility; political ecology; legal pluralism

### 1. Introduction

In Africa, land tenure reform is key to increased production (Obeng-Odoom 2012), soil fertility restoration (Beekman and Bulte 2012), and conflict management (Lind and Sturman 2002). Much of the debate revolves around two distinct ways of approaching such an institutional change. Some authors argue that land policies should be rooted in African customary land tenure systems (Platteau 2000, Benjaminsen *et al.* 2008, Sjaastad and Cousins 2008, Toulmin 2008, Knight 2010, Yami *et al.* 2011, Obeng-Odoom 2012), whereas others propose that neo-liberal individualist tenurial systems are more effective and desirable (De Soto 2000, Saint-Macary *et al.* 2010). Regardless of their differences, both camps argue that the reduction in uncertainty brought about by institutionalized land tenure reform would reduce conflict over land and stimulate sustainable agricultural intensification.

---

\*Corresponding author. Email: [rolandyemadje@yahoo.fr](mailto:rolandyemadje@yahoo.fr)

In an effort to improve land tenure and reduce rural poverty, Benin embarked on a Millennium Challenge Account (MCA) land-titling programme in selected areas from 2007 to 2011. The programme's objectives were to reduce the time and cost of obtaining a land title, facilitate secure land transactions, and reduce the number of land disputes through the creation of an effective and transparent land and property governance process. The rationale for these objectives was the claim that the inconsistencies between customary rules and state land law, and the oral character of land transactions and land access, did not result in equitable land access and tenure security, thereby intensifying tenure conflicts (MCA-Benin 2009).

On the Adja Plateau in Benin, conflicts about land arise from two major sources. The first is contestation of landownership. According to a report by MCA-Benin (2009), more than 1000 conflicts are brought to the regional courts annually, constituting over 90% of the courts' total caseload. The second source is access to land, because of informal and unstable rental agreements. Tenants claim to have little or no motivation to restore or improve soil fertility because they expect their landlords to chase them off when they see improvements in land productivity. Meanwhile, landowners claim that tenants actually contribute to the decline in soil fertility.

These contradictory claims are especially important in the oil palm-based cropping system (Brouwers 1993), which comprises a phase with food crops interspersed with juvenile oil palms, alternated by a phase with only mature trees and no food crops, known as oil palm fallow (*jachère de palmier* in French or *dekan* in Adja). Characterized as an agro-forestry system with beneficial economic and ecological interactions between the palm trees and food crops (Brouwers 1993), the system has also been shown to be an arena in which landowners and tenants fight about control over land. The system is therefore best studied through a political ecology lens (Yemadje et al. 2012). Our earlier study showed that landless tenants experienced reduced access to land as an outcome of the MCA land-titling programme (Yemadje et al. 2012). The implementation, in a number of villages in our study area, of this MCA programme in support of the Benin government's policies offered an opportunity to study land titling in action and gain insights that might be relevant for the theoretical debate about land reform in Africa.

The current paper examines how the implementation of formal land titling (a) affected the number of conflicts around landownership, (b) affected land access rules, and (c) how these changes affected investment in soil fertility management by both landowners and tenants. In particular, we look at investment in mineral fertilizers and organic amendments, at farmers' willingness to intercrop legumes with cereals, and at the use of the oil palm fallow. In the analysis, conflict reduction and improvement of tenure security are regarded as intermediary outcomes of land titling, and changes in soil fertility management practices as final outcomes. Knight (2010, p. 19) defined tenure security as the 'reasonable guarantee of land rights, supported by the certainty that one's rights will be recognized by others and, when challenged, protected by legal and social remedies'. The political ecology lens is used to analyse the effects of land titling on soil fertility management because it provides a framework for analysing relationships between institutional and technical agro-ecological practices (Andersson et al. 2011), particularly in terms of conflicts, power, and equity in access to, and control over, natural resources (Jarosz 2012).

## 2. Socio-technical background to land contracts

The institutional practices that currently constitute landownership and land-use rights on the Adja Plateau are dynamic and diverse, ranging from customary (or neo-customary, as some customary practices were in fact imposed by the colonial powers) and oral agreements, to informal paper contracts' *petitspapiers*' (Edja 2001, Lavigne-Delville 2002), to formal paper contracts, and finally to registered (and legally protected) paper titles. Both the colonial power (France) and

the independent Government of Benin have shaped the institutions that regulate ownership and access. In the 1950s, the colonial government initiated measures for the management of local oil palm plantations that aimed to increase tenure security for economically vulnerable farmers.

After independence on 1 August 1960, access to most land continued to be decided on an individual, household, or family level, with a clear increase in sharecropping arrangements (Brouwers 1993). Farming by women has become increasingly important since the 1970s and 1980s (Brouwers 1993), and this process continues to the present day. In the 1990s, women had access to around 24% of the land, and, although they can purchase land for commercial cropping, this does not happen very frequently (Biaou 1991).

Immediately after independence in 1961, the government of Mathieu Kerekou initiated agrarian reform (Law 61-26 of 10 August 1961) that established cooperatives for managing oil palm plantations on land expropriated with limited compensation for the original landowners (Le Meur 1995). This led to large-scale land withdrawal from landowners in southern Benin, exacerbated unhappiness about the earlier colonial measures, armed revolts, and emigration of unhappy landowners (Edja 2001). Today, these cooperatives have become more or less dysfunctional with continued litigation, ineffective management, and low productivity.

In 1993, the Government of Benin (with support from the World Bank) initiated a pilot project for natural resources management (*Programme de Gestion des Ressources Naturelles*). This was followed in 1999 by the Programme of Land and Natural Resources Management (*Programme de Gestion des Terroirs et des Ressources Naturelles*) a large section of which was devoted to the development of experimental land tenure plans (*Plan Foncier Rural* – PFR) in a representative sample of 41 municipalities.

This set of experiments had two primary objectives: (1) to ensure greater tenure security to facilitate agricultural investment and land viability and (2) to collect information on the socio-institutional conditions for adapting rural land legislation. The wording of the first objective indicates that, on a theoretical level, the government and its agencies assumed that increased and formal (rather than customary) tenure would result in agricultural investments based on using land as collateral for credit. The land tenure document issued after this experiment gave rise to Law 2007–03 of 16 October 2007, which established a rural land tenure framework in Benin, the basis for the final MCA land intervention in the country. The PFR is a gradual governmental policy, and the MCA is an implementation body of the PFR on the Adja Plateau. The MCA focused on policy implementation, and the change in land rental agreements was undertaken at a later stage by the MCA and not by the original PFR.

This is the context within which the MCA-Benin land-titling programme began in 2006. Its objective was stated as follows:

to ensure fair access to land, guarantee security of investment in land, and efficient management of tenure conflicts, so as to contribute to poverty reduction, to the consolidation of social peace and harmony, and to the realisation of integrated sustainable development. (MCA-Benin 2010, p. 21)

The MCA programme was funded by the Millennium Challenge Corporation under an agreement with the Government of Benin and in support of its land tenure policy. The MCA objectives suggest that it follows an individualistic, neo-liberal conception of land property rights, in that it intends to systematically record and formalize rights through state institutions, with the objective of ensuring security of ownership and encouraging agricultural investment.

The MCA was implemented in 9 districts and established PFRs in 300 communities, with village-based land-management platforms (*Section Villageoise de Gestion Foncière* – SVGF) to which important powers are legally conferred. On the Adja Plateau, the MCA land-titling programme was implemented in 34 villages, 10 of which are in Klouekanme District. When a diagnostic

study (Yemadje *et al.* 2012) showed that the process of establishing ownership actually reduced access to land for tenants, a second phase was initiated, focusing on formalizing access agreements.

The contract between landowners and tenants, whether formal, informal, customary, or ‘modern’, is formalized in terms of the size of the land rented, the duration of the agreement, and rights to crop. Such contracts have often been a source of tension. In Klouekanme District, land was most often allocated to close relatives (family members, including wives) under short-term agreements. This pattern of allocation was largely driven by landowners’ fear that they would lose their land to dishonest tenants. Before the MCA intervention, the customary contracts between landlords and tenants were reinforced by regular symbolic gifts and material assistance provided by tenants to landlords.

Maintaining a relationship of social reciprocity is customarily an important condition for tenants to maintain their access to land. For example, under the customary loan type of agreement (*Ahaya*), the landlord and tenant are often close relatives. Family relationship implies that the tenant runs little risk of being evicted, as long as he/she meets the standards set by the landowner. In the borrowing type of agreement (*Aikougbanwhihoue*), landowners rent their land to selected tenants who are considered to be of good character. Here too, landlord and tenant treat each other as part of one family. The selection of tenants is often based on confidence, estimation of skills, and membership of the in-law family. Tenants help landlords when it comes to burials or other family issues. In other cases, landlords compel tenants during the morning to work on the owners’ fields, the afternoons being available for work on the contracted land. Landowners offer land for a sharecropping type of agreement (*Deman*) when they are too busy with off-farm activities or because they have large tracts of land to work themselves. Under this type of agreement, the tenant has to give one-third of the harvest to the landlord, or half of the harvest when the landlord provides mineral fertilizers and seeds. Also in this case, landowners demand a lot from tenants in terms of morality and responsibility. Again, both parties consider and treat the other as part of one family; this implies the obligation to assist each other in difficult periods of life. In some cases, when the tenant is the landowner’s wife, both man and woman work in the field together. Such arrangements illustrate that customary agreements about access to land are embedded in social relations, thus hampering the evolution of purely individualistic tenure arrangements.

### 3. Research area, data collection, and analysis

#### 3.1. Research area

Field research was conducted in Klouekanme District on the Adja Plateau (Figure 1), which is of mixed Fon and Adja ethnicities (Wartena 2006). The climate on the plateau is sub-equatorial with bimodal annual rain fall averaging less than 1100 mm with high spatial and temporal variability (Amoussou *et al.* 2009). These conditions are not conducive to high levels of palm oil production and for that reason most trees are used for producing palm wine or spirits. Oil palm is a major element of the tenure system (Edja 2001).

#### 3.2. MCA programme implementation

The research reported in this paper was not conducted in conjunction with the MCA programme, but instead uses the MCA land-titling programme as an opportune natural experiment (Galiani and Schargrodsky 2010), wherein the implementation of land titling in some villages acts as the ‘treatment’ and its absence in other villages as the ‘control’. Our research was conducted in two stages (Table 1): (a) at the district level, 10 MCA villages were compared with 120 non-MCA villages with respect to conflicts over ownership and (b) at the village level, Agbago (an MCA village) and Akouegbadja (a non-MCA village) were compared with respect to practices relating to land access and use. Both Agbago and Akouegbadja are in the same sub-district

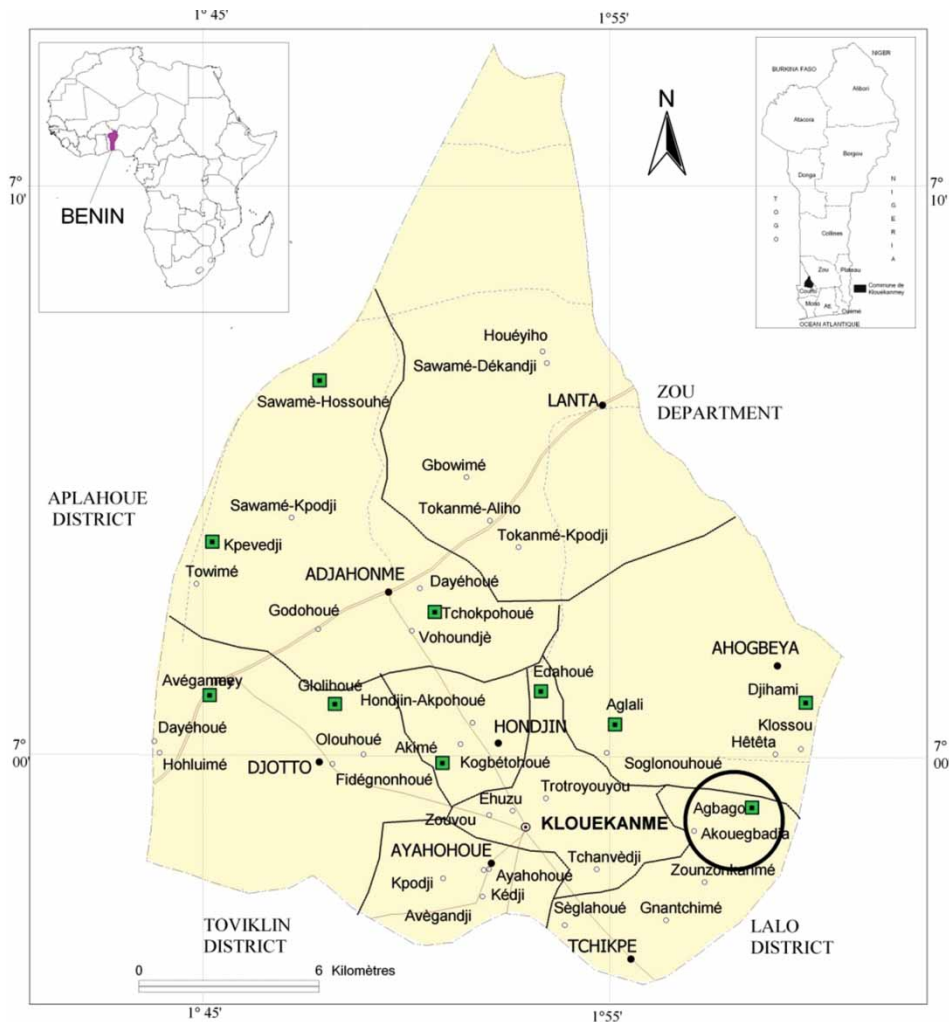


Figure 1. Map of Klouekanme District showing the MCA programme villages (green squares) and the two villages (experimental and control) used for detailed study (large circle). The original map was obtained from IGN, 1992 in Benin and the PFR villages and the study villages have been positioned by the main author based on his fieldwork (2010 to 2012).

(Tchikpe) and have similar geographies. At the larger (district) level, we compared MCA and non-MCA villages before and after the intervention. At the local (village) level, we compared the MCA and the non-MCA village only after the intervention. We recognize that this with-and-without-treatment research design is not quite as strong as a before-and-after-treatment design, but we are confident that it allows insights into the effects reported at both levels, which are at least partially consequent upon, and likely to be attributable to, the MCA intervention.

### 3.3. Data collection and analysis

Three research questions guided this study: (1) How does land titling affect conflict (and conflict resolution) among landowners who claim the same plot? (2) How does land titling affect social

Table 1. Methods of data collection, level of investigation, and nature of data collected for each research question.

Nature of data collected	District level of investigation (130 villages)		Village level of investigation (Agbago and Akouegbadja)	
	Qualitative	Quantitative	Qualitative	Quantitative
Research question 2: How does land titling affect conflict between landowners?		Archive files from the conciliation law court of Klouekanme from 2002 to 2012 to compare 10 MCA villages with 120 non-MCA villages	(1) Seven cases of land conflicts analysed in Agbago (2) Informal discussions with village chief and aged landowners	Survey in an MCA (Agabgo) and a non-MCA village (Akouegbadja)
Research question 3: How does land titling affect land access rules?	(1) Informal discussion with: the <i>Responsable Communal de Promotion Agricole</i> , the CoGEF members, and GRAIB (an NGO)		(1) Participant observation of 10 landowners and 10 tenants from 2010 to 2012	Survey in an MCA (Agabgo) and a non-MCA village (Akouegbadja)
Research question 4: How do land titling and land access rules affect soil fertility management practices?	(2) Review of literature for socio-technical background ( <i>diagnostic foncierd'Agbago</i> )		(2) Informal discussion with: landowners and tenants (3) Review of literature for socio-technical background ( <i>diagnostic foncierd'Agbago</i> )	

Notes: The research questions are numbered with reference to their order in the whole research, not this paper. *Participant observation*: this activity consisted of living in the study village with 10 landowners and 10 of their respective tenants and observing the daily practices characterizing their land tenure arrangements and their soil fertility management practices, during two long and two short rainy seasons. The archive files were examined in their actual format; the data, however, were entered in an excel file for further calculations.

relations between (the legally recognized) landowners and tenants? (3) How does land titling affect land-management practices by landowners and tenants?

At the district level, data were collected from 2002 to 2012 from the archives of the Klouekanme law court of conciliation, where landownership disputes are resolved. (Conflicts about rental agreements usually do not reach this court.) At the village level, we targeted 462 field plots randomly selected in Agbago (235 plots) and Akouegbadja (227 plots). Participation in the MCA is treated as the independent variable and the social dynamics of land access and soil fertility management as dependent variables. Survey data were analysed using chi-square analysis with Fisher's exact test at  $p < .05$ .

## 4. Results

### 4.1. Landownership and conflict reduction

Table 2 compares the *ex ante* and *ex post* situations for both the MCA and non-MCA villages. It shows that, before the intervention, significantly more land conflicts occurred in the MCA villages

Table 2. Land tenure conflicts based on archival records before and during the titling programme in non-MCA and (future) MCA villages.

	Before MCA implementation (years 2002–2006)		During MCA implementation (years 2007–2011)	
Sources of conflict: Claims on ownership or usufruct based on:	Non-MCA villages ( <i>N</i> = 120 villages)	(Future) MCA villages ( <i>N</i> = 10 villages)	Non-MCA villages ( <i>N</i> = 120 villages)	MCA villages ( <i>N</i> = 10 villages)
Purchase of land	214	58	207	33
Common inheritance	20	5	0	0
Unclear field boundaries	5	0	4	0
Single inheritance	7	0	1	0
Sold oil palm fallow land ( <i>Dekan</i> )	1	0	1	0
Tenancy rights to crop	4	0	0	0
Total	251	63	213	33
Conflict/village	2.1	6.3	1.8	3.3

than in the non-MCA villages ( $\chi^2 = 67.4$ ;  $p < .001$ ). The same difference is obtained after the intervention ( $\chi^2 = 11.4$ ;  $p < .001$ ). However, comparing the *ex ante* and *ex post* situations brings to light a significant decline in the number of conflicts in the MCA villages ( $\chi^2 = 9.4$ ;  $p < .01$ ), whereas the non-MCA villages do not show a significant decline ( $p > .05$ ). This outcome suggests that the titling programme reduced the number of conflicting claims on ownership. Interestingly, even after the MCA intervention, the number of ownership conflicts after supposed land transactions did not diminish, suggesting that implementation of the titling programme was not entirely conclusive.

Further analysis of Table 2 suggests that, apart from claims on ownership, other sources of land conflict were more widespread in the non-MCA villages, and that they persisted in them, whereas they disappeared in the MCA villages. However, this number is low and does not lend itself to separate statistical analysis. Conflicts about tenants' cropping rights appear to be insignificant. However, it is likely that such conflicts are not brought to the (formal) Klouekanme court of conciliation, but submitted (and sometimes resolved) at lower (customary) courts.

#### 4.2. Landownership, land access, and tenure security

We now turn to the results of the in-depth analysis of the two villages. Table 3 shows the number and nature of conflicts in, respectively, Agbago (MCA village) and Akouegbadja

Table 3. Occurrence of conflicts between landowners and tenants about access land in the non-MCA and the MCA village (by individual plots).

	Non-MCA village (Akouegbadja)	MCA village (Agbago)	Total
No conflict occurring	219	220	439
Unclear land boundary	4	2	6
Claim on common heritage	4	1	5
Conflict due to the oral character of arrangement	4	1	5
Conflict due to the ambiguous character of the arrangement	3	1	4
Conflict due to non-respect of terms of the arrangement	1	2	3
Total	235	227	462

(non-MCA village). This table provides some indication that more conflicts occurred in Akouegbadja (16) than in Agbago (7), but due to the relatively small numbers (for most plots no conflicts were recorded), the difference was not (quite) significant (Fisher's exact test:  $p = .054$ ).

During MCA implementation, programme managers encountered informal paper contracts (*petits papiers* also called *reçu d'achat*) regarding landownership. The signing of such transaction papers was witnessed by the children of the seller, often in front of the village chief (who did not sign the papers himself). Because of the multiplicity of forms of *petitspapiers* and their ambiguity, it was evident that the choice of witnesses was very important. The legitimacy or credibility of witnesses affects the status of the contract. The ambiguous status of *petitspapiers* also resulted in unwillingness to engage in contracts with outsiders, and most land transactions were in fact intra-familial. Because of their ambiguity, the MCA sought to replace *petitspapiers* with formal contracts. However, their proposal for a formal template was not accepted because Klouekanme Municipality had designed its own template for transactions. Currently, the latter template is in use. Contracts based on it are signed by both the village chief and the mayor in front of the SVGF platform members. Although this template suggests a strong tendency to legalize land transactions, we observed that the status of the signing witnesses (village chief and mayor) is different, in that the signature of the mayor is considered the more important one. The introduction of these contracts by Klouekanme Municipality and the MCA appears to have resulted in an increase in the use of *petitspapiers* in non-MCA villages also, where land property rights were not yet formally registered.

Table 4 lists the kinds of agreement about land access in both villages. The relative number of paper-based contracts (*petitspapiers*) was significantly higher in Agbago (Fisher's exact test:  $p = .017$ ), indicating an increased interest in some form of formalization of agreements about access to land after the titling programme. Also, significantly more plots were rented out to tenants in Agbago than in Akouegbadja (Fisher's exact test:  $p < .001$ ). This difference reflects landowners' increased confidence that tenure contracts will be adhered to, and this translates into a greater willingness to rent out land. However, the data also show that many plots in both villages are used by their owners without proof of title. Somewhat contrary to Table 2 (analysis at communal scale), differences between the two villages for plots owned with or without title were not significant ( $p = .09$ ), although the proportion of plots under paper-based title (ownership and use rights) was somewhat higher in the MCA village Agbago than in Akouegbadja (42.3% versus 31.1%).

The introduction of formal land contracts also affected the nature of agreements about land access. Whereas initially almost all rental contracts were unsigned and unwitnessed, the MCA intervention changed the nature of such agreements. The MCA has proposed templates for contracts, not yet in use, that give more recognition to tenants' rights. In all, four kinds of

Table 4. Agricultural use of fields (by landlords or by tenants) and the kind of (rental) agreement for land used by tenants in the non-MCA and the MCA village in 2012 after land titling (by number of plots).

	Non-MCA village $N = 235$ %	MCA village $N = 227$ %
Used by owner, without title	47.6	30.9
Used by owner, with title	21.3	16.3
Used by tenants of which	31.1	46.8
Paper-based, non-witnessed	9.8	26.0
Not paper-based, non-witnessed	21.3	26.9
Total	100	100

documents have been prepared for future use. The arrangements covered by the new documents are: (i) *contrat de bail pour la plantation d'arbres* (a long-term rental contract to regulate the right to plant trees in commercial plantations); (ii) *contrat d'amodiation de parcelle* (a sharecropping arrangement); (iii) *contrat de location de parcelle* (a short-term rental agreement to grow food crops without the right to plant trees); (iv) *contrat de prêt de parcelle à titre gratuit* (a short-term agreement where no monetary transaction is involved, often used in cases of land transactions within families or among people with moral obligations as in families). All contracts are issued on behalf of Klouekanme Municipality. They are to be signed by both parties, four witnesses (two for each party involved) and the village chief, but not by (or behalf of) the mayor of Klouekanme, indicating that such contracts are even more in the customary realm. All contracts have six sections: (1) identification of the parties concerned; (2) the purpose of the contract and identification of the plot; (3) the specific conditions of the agreement; (4) the obligations of both parties; (5) the conditions under which the contract can be annulled; and (6) a ruling about the management of complaints, which indicates the importance of reconciliation and social peace rather than formal justice. This last section makes clear that conflict resolution should first be attempted through local mediation, by a person chosen by both parties. This section also firmly places such contracts in the customary, rather than in the formal legal, realm. This choice is understandable, considering the capacity of the formal legal system to deal with complaints. Table 3 indicates that between 3% (MCA village) and 7% (non-MCA village) of the plots are still a source of conflict. When scaled up to all the plots in the village, and all the villages in the district, it is clear that conflict resolution cannot be the responsibility of only the formal legal realm. These new contracts were not yet operational in 2012, but observations in the villages clearly showed that people were already acting as though this new system of regulating access to land had been implemented.

#### 4.3. New contracts, tenure security, and agricultural investment

The changes in tenure security as a consequence of the titling and the subsequent new (proposed) forms of rental contracts created a new environment in which landowners and tenants could make new decisions regarding investment in agriculture and soil fertility. Such investments should be seen in a context in which pressure on land is increasing the need for more permanent forms of cropping, without extended fallows.

Table 5 documents the soil fertility management practices on plots used by either field owners or by tenants in, respectively, Agbago and Akouegbadja. Both landowners and tenants in Agbago

Table 5. Soil fertility management practices by landowners and tenants in Akouegbadja (non-MCA village) and Agbago (MCA village).

	Non-MCA village (Akouegbadja)		MCA village (Agbago)	
	Landowners (%) (N = 163)	Tenants (%) (N = 72)	Landowners (%) (N = 107)	Tenants (%) (N = 120)
Cowpea rotation	66.87	75	84.11	84.16
No cowpea rotation	33.12	25	15.88	15.83
Use of mineral fertilizer	77.30	83.33	92.52	93.33
Non-use of mineral fertilizer	22.69	16.66	7.47	6.66
Use of household waste	51.53	69.44	58.87	64.16
Non-use of household waste	48.46	30.55	41.12	35.83
Intercropping with oil palm	31.28	22.22	7.47	9.16
No intercropping with oil palm	68.71	77.77	92.52	90.83

used more mineral fertilizer than their counterparts in Akouegbadja (Fisher's exact test:  $p < .001$ ; and  $.01 < p < .05$ , respectively). Neither group showed increased use of household waste after the titling programme ( $p > .05$  in both cases). Interestingly in Agbago, landowners but not tenants more often intercropped cowpea with maize than in Akouegbadja ( $p < .002$  and  $p > .05$  for landowners and tenants, respectively). The use of oil palm in agricultural fields decreased more in Agbago than in Akouegbadja ( $p < .02$ ).

Two lines of evidence suggest that the MCA land titling and the subsequent introduction of new rental agreements are contributing to the demise of the oil palm-based cropping system. First, on the Adja Plateau, oil palms (and other trees) indicated field boundaries, and oil palm fallow was often used as proof of landownership. The oil palm fallow evolved not only to restore soil fertility but also as a land security strategy for landowners in situations where land use would otherwise be contested by other landowners or tenants. That use has become less relevant. Second, there is an increased willingness among landowners and tenants to invest in soil fertility (increased use of legumes as a crop in rotation and increased use of mineral fertilizer); this implies less reliance on oil palm fallow for soil fertility management.

Among the four kinds of contracts whose implementation has been planned, there is an entirely new one that allows tenants to plant trees. This would include the planting of hybrid oil palms, in accordance with the priorities for the oil palm sector defined by the Government of Benin (Akpo *et al.* and Osei-Amponsah *et al.* this issue). Such contracts would have a duration of 20–25 years, making them very different from the short-term contracts typical for food crops. It remains to be seen to what extent this new possibility would allow a revival of the old oil palm-based cropping system, or whether it would lead to commercial plantations, in which case the new option would increase the competition with land for food production. Such contracts might also enable a new type of absentee elite tenant who invests in plantations to establish use rights on land.

## 5. Discussion

This study has documented changes in land ownership and rental agreements consequent to the introduction of land titling and new forms of paper contracts by the MCA, and it has related these changes to debates on tenure and access to land. Often the debate has been framed in dichotomous terms between two systems of tenure, with an assumption of a linear evolution from customary to formal (and from communal to individualistic) rules (Platteau 1996). However, such models take too simplistic a view and give insufficient attention to institutional pluralism and the ambiguity that could result from multiple institutions (Chauveau *et al.* 2006, Adjei-Nsiah *et al.* 2008, Lund and Boone 2013).

On the Adja Plateau, we see three different types of changes in contracts dealing with access to land: (1) from oral to written contracts, probably inevitable as societies become increasingly literate; (2) from un-witnessed to witnessed contracts, where the capacity to mobilize witnesses that have sufficient credibility and legitimacy is important; and (3) from contracts backed up by local chiefs under customary rules to contracts backed up by the state in a legal system. With regard to the last change, we observed an interesting difference between contracts relating to property (signed by the village chief and the mayor of Klouekanme) and those relating to secondary access rights (signed only by the village chief). At first sight, this difference suggests that property relations have become more formalized, especially since landowners seem to consider the signature of the mayor more valuable than that of the village chief. This observation suggests that property contracts relate to competing institutions and thereby contribute to debates about the nature of the authority that has the legitimacy to settle conflicts about property (Lund and Boone 2013).

We observed another example of legal hybridization that is closer to the customary end of the spectrum, in the form of the rules that relate to rental agreements, including agreements under which the use of the land is given for free. These are formal contracts backed up by customary institutions, i.e. not the *petitspapiers* that existed before. Still, these new types of contracts provide little certainty for the landless tenants. However, the fact that they are on official paper (of the Klouekanme Municipality, although not signed by its mayor), and contain the signature of the village chief and of two witnesses from each party involved, suggests that the contract is also backed to some extent by local government and indirectly by the state. Two developments are likely to be responsible for this hybrid nature of new contracts. First, under the legal system, the state does not have the capacity to regulate conflicts relating to rental agreements. The number of cases to be dealt with (around 5% of all plots) would be beyond the capacity of the state to resolve (Edja 2001). Such hybrid contracts reflect what Lund and Boone (2013) call the politics of jurisdiction: a competition for authority, in which the ability within the customary domain effectively to deal with issues helps define, reproduce, and maintain customary authority. This competition could possibly reproduce itself rather than lead to institutional closure (Lund and Boone 2013). According to Obeng-Odoom (2012), however, individualist systems inevitably drive out communal systems. If, in plural systems, institutional competition maintains ambiguity, one cannot claim, as do the more structuralist definitions of institutions (North 2005) that institutions reduce uncertainty in human interaction (Adjei-Nsiah *et al.* 2008). The claim that legal pluralism (Griffiths 1986, von Benda-Beckmann 2002) created by the coexistence of customary and formal land property and access rules is responsible for conflicts does not go uncontested (Platteau 1996). It has been observed that the patchwork resulting from such legal pluralism can help reduce conflicts about access to land as actors creatively engage both state and customary institutions, what Cleaver (2002) calls *bricolage*.

These three changes in the nature of agreements are happening concurrently, albeit at different rates and without fixed endpoints. The coexistence of customary and formal land access rules is therefore likely to be inevitable. Moreover, it is also an outcome desired by many of the parties involved. Further evidence is provided by the fact that many plots of land continue to be owned without title. Apparently, the link between titling and land ownership can be indirect, i.e. when titling changes the perception of tenure security even if the process of formal and legal titling has not been completed (Obeng-Odoom 2012).

As noted above, the new forms of rental agreements have not yet come into general use. However, many people know that they will soon be implemented and are already effectively acting upon them, as shown by the differences between Agbago and Akouegbadja. For that reason, we suggest that they simultaneously reflect and further cause institutional change. It will be especially important to further study contracts that allow tenants to plant trees, as these would support long-term agreements that would disconnect the right to plant trees from ownership of the land. With such contracts, commercial plantations of (high-yielding hybrid *tenera*; see Akpo *et al.* this issue) oil palms could become increasingly important in Adja (even though the area is not agro-ecologically suited to palm oil production, as noted earlier). Such commercial undertakings could initiate a process of increased competition over land between tenants with short-term contracts for annual crops and new entrepreneurs with long-term contracts for tree crops. If these new entrepreneurs are better able to leverage the hybrid institutional system, or move it more towards a more formal and individualistic system, new struggles over land could arise, potentially threatening the intensification of food cropping on the densely populated Adja Plateau.

This study shows that, once ownership issues were clarified, landowners were more willing to enter into more formalized rental contracts. Taken together, landowners' increased willingness to engage in rental contracts, and increased trust between landowners and tenants, enhance options

for agricultural intensification. Under this scenario, the use of long-term oil palm fallow appears to have become less necessary, either for reasons of recovering soil fertility, or as a strategy to keep tenants from over-pruning palm trees as a means to extend their use of the agricultural land. Under agricultural intensification, soil fertility could be maintained through increased use by both landowners and tenants of fertilizers and possibly of organic waste. However, we were unable to demonstrate that an increased number of farmers apply organic waste.

This study contributes to the debate on formal and informal tenurial laws and rules in relation to sustainable agriculture in Africa. It is situated between the two theories of pathways for institutional change: towards customary institutions (Platteau 2000, Pritchard 2013) and towards state institutions (De Soto 2000). Our empirical analysis of land tenure practices contributes to a better understanding of the role of law in society, law and human agency, and the strategic uses of law in specific situations of competition or conflict. The implication of our research is that land access rules do not evolve in a linear fashion and that the application of blueprints is not necessarily the best option for institutional change. The use of linear blueprints and their foundation in state institutions, or ‘institutional mono-cropping’ (Evans 2004), generates systems that have little of the variety or flexibility in their rules needed to allow them to be effective in highly diverse ecologies (Ostrom and Basurto 2011). Our study shows that the state institutions regulating land access can evolve in ways that simultaneously complement and compete with customary land institutions, leading actors in a system of legal pluralism to creatively engage in institutional *bricolage*, drawing on both formal and customary institutions.

Paper-based registration for temporary rental arrangements was not the original objective of the MCA. That element was developed after the programme became aware that land titling led to reduced opportunities for tenants to access land for farming. The new opportunities provided by paper contracts for tenants to access land on the Adja Plateau triggered the issue of recognition of customary rules by formal land law. According to Knight (2010), a land law that seeks to recognize customary land rights must allow space for custom to freely evolve so that it can continue to address the changing land-related needs of community members, and yet include protection against those customary practices that perpetuate discrimination and inequity.

The institutional reconfiguration brought about by the MCA intervention appears to have contributed to the demise of the oil palm-based cropping system and to have allowed further agricultural intensification. Investment in soil fertility through the increased use of mineral fertilizers was noted subsequent to the intervention. Where tenants are involved, these investments are a consequence of the enhanced trust and higher security provided after the legalization of formal landownership.

We agree with Peters (2009) about the urgency to re-launch the debate on the form and content of public land tenure interventions. Many rules are unwritten, and many written laws are not followed as rules (Ostrom and Basurto 2011). The new use of paper contracts to formalize land access arrangements seems to succeed in giving more status to local municipalities as institutions capable of resolving local conflicts without having to resort to the legal institutions of the state. In such contracts, maintenance of local peace seems more important than seeking justice under the law. Hence, both local municipalities and the state in a hybrid performance each play their own roles in regulating ownership and subsequent secondary rights to land (Shipton and Goheen 1992). Such hybrid institutions could become key to economic development.

## 6. Conclusion

This study revealed mechanisms of institutional change that led to technical changes in agricultural practices and subsequently to changes in soil fertility management. In response to the MCA land-titling and rental contract intervention, landowners’ soil fertility management, embedded in

changing land tenure institutions, is shifting from long-term cycles of oil palm fallows and cropping to short-term strategies for land rental and fertilizer use. Institutional changes were implemented in the form of paper-based (but not necessarily legal) contracts. These new contracts combine formal land titling with customary tenure arrangements, maintaining legal pluralism in the laws regulating land use on the Adja Plateau. The study therefore confirms the need to take into account existing practices when institutional reconfiguration is attempted. Land-management practices need to be understood and the plurality of land access rules need to be accepted before land registration and titling is attempted. Such interventions should avoid the use of legal blueprints.

Many successes have emerged despite policy rather than because of it (Pretty *et al.* 2011). The evidence from research in sub-Saharan Africa shows that many of the benefits assumed to stem from land titling are not automatic and, in some circumstances, titling may have the opposite impacts from those expected (Toulmin 2008). The policy insights arising from our research suggest that international development projects and donor agencies should strengthen customary arrangements for increased tenure security, which, in combination with increased trust, can become a vehicle for sustainable agricultural intensification. We, therefore, suggest a flexible model of institutional and technical change that captures the complexity of the land access rules in West Africa. Consultation with landowners and tenants through multi-level innovation platforms potentially leads to win–win solutions that avoid the risks of blind application of legalistic blueprints (Hounkonnou *et al.* 2012). Finally, in the interest of complementing our present quantitative research approach, we recommend further analysis of land tenure change through ethnographic research on actors' practices and strategies of institutional *bricolage* within the oil palm-based cropping system.

### Acknowledgements

The field work was supported by the landowners and tenants of Klouekanme. Statistical assistance was provided by the LADYD, Laboratoire d'Analyse des Dynamiques Sociales et du Développement. Special thanks are due to Prof. Janice Jiggins for literature suggestions. Constructive comments by three reviewers are also gratefully acknowledged.

### References

- Adjei-Nsiah, S.A., *et al.*, 2008. Action research on alternative tenure arrangements in Wenchi, Ghana: learning from ambiguous social dynamics and self-organized institutional innovation. *Agriculture and human values*, 25, 389–403.
- Akpo, E., *et al.*, 2014. Social institutional dynamics of seed system reliability: the case of oil palm in Benin. *International journal of agricultural sustainability*, 12, 214–232.
- Amoussou, E., *et al.*, 2009. Instability of space-time rainfall regimes in the payment of basin Mono-Couffo and its impact on the flow of 1961 to 2000. Paper presented at 3rd International Conference, African Monsoon Multidisciplinary Analysis (AMMA) [online]. Ouagadougou: Burkina Faso. Available from: <http://hal.archives-ouvertes.fr/hal-00418665> [Accessed 8 December 2013].
- Andersson, E., Brogaard, S., and Olsson, L., 2011. The political ecology of land degradation. *Annual review of environment and resources*, 36, 295–319.
- Beekman, G. and Bulte, E.H., 2012. Social norms, tenure security and soil conservation: evidence from Burundi. *Agricultural systems*, 108, 50–63.
- Benjaminsen, T.A., *et al.*, 2008. Formalisation of land rights: some empirical evidence from Mali, Niger and South Africa. *Land use policy*, 26, 28–35.
- Biaou, G., 1991. *Régime foncier et gestion des exploitations agricoles sur le Plateau Adja au Bénin*. Thesis (PhD). CIRES, Université de Cocody, Abidjan, Bénin.
- Brouwers, J.H.A.M., 1993. *Rural people's response to soil fertility decline. The Adja case (Benin)*. Thesis (PhD). Wageningen Agricultural University, The Netherlands.

- Chauveau, J.-P., et al., 2006. *Changes in land access and governance in West Africa: markets, social mediations and public policies: results of the CLAIMS research project*. Nottingham: International Institute for Environment and Development.
- Cleaver, F., 2002. Reinventing institutions: bricolage and the social embeddedness of natural resource management. *The European journal of development research*, 14, 11–30.
- De Soto, H., 2000. Taking land from the poor, giving to the rich. *Watershed: people's forum on ecology*, 8, 14–25.
- Edja, H., 2001. *Land rights under pressure: access to resources in southern Benin*. London: International Institute for Environment and Development.
- Evans, P., 2004. Development as institutional change: the pitfalls of monocropping and the potentials of deliberation. *Studies in comparative international development*, 38, 30–52.
- Galiani, S. and Schargrodsky, E., 2010. Property rights for the poor: effects of land titling. *Journal of public economics*, 94, 700–729.
- Griffiths, A., 1986. What is legal pluralism? *Journal of legal pluralism and unofficial law*, 24, 1–55.
- Hounkonnou, D., et al., 2012. An innovation systems approach to institutional change: smallholder development in West Africa. *Agricultural systems*, 108, 74–83.
- Jarosz, L., 2012. Growing inequality: agricultural revolutions and the political ecology of rural development. *International journal of agricultural sustainability*, 10, 192–199.
- Knight, R.S., 2010. *Statutory recognition of customary land rights in Africa: an investigation into best practices for lawmaking and implementation*. Rome: FAO.
- Lavigne-Delville, P., 2002. When farmers use 'pieces of paper' to record their land transactions in Francophone rural Africa: insights into the dynamics of institutional innovation. *The European journal for development research*, 14, 89–108.
- Le Meur, P.Y., 1995. *Etat, paysanneries et pouvoirs locaux au Sud-Bénin. Le palmier vu d'en bas*. Paris: Karthala.
- Lind, J. and Sturman, K., 2002. *Scarcity and surfeit: the ecology of Africa's conflicts*. Pretoria: Institute for Security Studies, South Africa.
- Lund, C. and Boone, C., 2013. Introduction: land politics in Africa – constituting authority over territory, property and persons. *Africa*, 83, 1–13.
- MCA-Benin, 2009. *Analyse des conflits fonciers et leurs modes de règlement: étude sur la politique et l'administration foncières*. Cotonou: MCA-Bénin.
- MCA-Benin, 2010. *Résumé du Livre Blanc de politique foncière*. Cotonou: MCA-Bénin.
- North, D.C., 2005. *Understanding the process of economic change*. Princeton, NJ: Princeton University Press.
- Obeng-Odoom, F., 2012. Land reforms in Africa: theory, practice, and outcome. *Habitat international*, 36, 161–170.
- Osei-Amponsah, C., et al., 2014. Institutional change and the quality of palm oil: an analysis of the artisanal processing sector in Ghana. *International journal of agricultural sustainability*, 12, 233–247.
- Ostrom, E. and Basurto, X., 2011. Crafting analytical tools to study institutional change. *Journal of institutional economics*, 7, 317–343.
- Peters, P.E., 2009. Challenges in land tenure and land reform in Africa: anthropological contributions. *World development*, 37, 1317–1325.
- Platteau, J.P., 1996. The evolutionary theory of land rights as applied to sub-Saharan Africa: a critical assessment. *Development and change*, 27, 29–86.
- Platteau, J.P., 2000. Does Africa need land reform? In: C. Toulmin and J. Quan, eds. *Evolving land rights, policy and tenure in Africa*. London: International Institute for Environment and Development and Natural Resources Institute, 51–74.
- Pretty, J., Toulmin, C., and Williams, S., 2011. Sustainable intensification in African agriculture. *International journal of agricultural sustainability*, 9, 5–24.
- Pritchard, F.M., 2013. Land, power and peace: tenure formalization, agricultural reform and livelihood insecurity in rural Rwanda. *Land use policy*, 30, 186–196.
- Saint-Macary, C., et al., 2010. Land titling policy and soil conservation in the northern uplands of Vietnam. *Land use policy*, 27, 617–627.
- Shipton, P. and Goheen, M., 1992. Understanding African land-holding: power, wealth, and meaning. *Africa*, 62, 307–325.
- Sjaastad, E. and Cousins, B., 2008. Formalisation of land rights in the South: an overview. *Land use policy*, 26, 1–9.
- Toulmin, C., 2008. Securing land and property rights in subSaharan Africa: the role of local institutions. *Land use policy*, 26, 10–19.

- Von Benda-Beckmann, F., 2002. Who's afraid of legal pluralism? *Journal of legal pluralism and unofficial law*, 47, 37–83.
- Wartena, D., 2006. *Styles of making a living and ecological change on the Fon and Adja plateau in South Benin, ca.1600–1990*. Thesis (PhD). Wageningen Agricultural University, The Netherlands.
- Yami, M., Vogl, C. and Hauser, M., 2011. Informal institutions as mechanisms to address challenges in communal grazing land management in Tigray, Ethiopia. *International journal of sustainable development and world ecology*, 18, 78–87.
- Yemadje, R.H., *et al.*, 2012. The political ecology of land management in the oil palm based cropping system on the Adja plateau in Benin. *NJAS – Wageningen journal of life sciences*, 60–63, 91–99.